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ABSTRACT

This paper summarizes a comparative study of the impact of market and technological changes on human resources in banks and insurance companies in five countries: France, Germany, Japan, Sweden, and the United States. The research was organized around case studies of changes in 12 firms--9 banks and 3 insurance carriers. The paper discusses the findings by focusing on what they might tell about: (1) the changing nature of employer-based training; (2) the distributional implications of the emergence of core-periphery employment structures within firms for those who may benefit or fail to benefit from employer-based training; and (3) the alleged lack of competitiveness of U.S. firms in world markets. Following the introduction, the paper is divided into four major sections. The first section describes the origins and nature of recent market changes as well as the connection between those changes and technological changes. In the second section, the effect of change on the kind of human resources needed by firms is described, emphasizing the emergence of a new matrix of needed skills. The third section reviews how firms are adjusting to these new needs both by altering the training of their own workers and by reshaping their relationship to the external labor market. The fourth section concludes with a review of current policies and trends that provide lessons for the United States. (KC)

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# SKILLS, SKILL FORMATION, PRODUCTIVITY AND COMPETITIVENESS: A CROSS-NATIONAL COMPARISON OF BANKS AND INSURANCE CARRIERS IN FIVE ADVANCED ECONOMIES

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## INTRODUCTION

At some point in the mid-1970s, financial service industries in advanced economies entered a major period of restructuring in response to sweeping market and technological changes. Economists like to focus their attention on transformations that are happening at the margin, because it is often an important way to point to new trends that, sooner or later, are likely to unfold throughout the broader economy. It was with these observations in mind that, in 1986, the Organisation for Economic Co-operation and Development (OECD) asked my colleague Olivier Bertrand and me to launch a comparative study of the impact of market and technological changes on human resources in banks and insurance carriers in five member countries: France, Germany, Japan, Sweden, and the United States. The OECD request was for an examination of institutional changes resulting from market and technological transformations, with an emphasis on changing skills and skill formation processes. To keep the study manageable, our research was organized around case studies of changes in twelve firms--nine banks and three insurance carriers. Our findings were published in book form, this summer, by the OECD.[1]

In this paper, I want to discuss and to expand on some of our findings by focusing on what they might tell us about: (1) the changing nature of employer-based training; (2) the distributional implications of the emergence of core-periphery employment structures within firms for those who may benefit or fail to benefit from employer-based training; and (3) the alleged lack of competitiveness of U.S. firms in world markets.

Following this introduction, the paper is divided into four major sections. In the first, I describe the origins and the nature of recent market changes as well as the connection between those changes and technological changes. In the second, I turn to the effect of change on the kind of human resources needed by firms, emphasizing the emergence of a new matrix of needed skills. Once this assessment has been completed, I review how firms are adjusting to these new needs by both altering the training of their own workers and by reshaping their relationship to the external labor market. In the fourth section, I conclude with a review of current policies and trends that provide lessons for the United States. I hope these will address directly several of the key concerns underlying the work of the National Assessment of Vocational Education.

Needless to say, this paper is not a substitute for the longer study, for space limitations require that part of the argument be summarized, even simplified here.

To a considerable extent, the study found remarkable similarities in market and skill changes among the five countries, with, nevertheless, some differences in the extent of diffusion of new technologies. In comparison, the study found marked differences in firms' responses to change, largely based on countries of origin. For these reasons, country differences are emphasized in this paper only beginning with the Section III, which deals with firms' adjustments to the new human resources needs. Differences regarding rates of diffusion of new technologies are examined in the conclusion.

## MARKET AND TECHNOLOGICAL CHANGES

### The Intensification of Competition: The Shift from "Quantitative" to "Qualitative" Growth

Two major causes for changes stand out behind the recent transformation of financial services in the five countries examined: one is market saturation; the other, financial disintermediation.

Until a decade ago, the main expansion strategy for financial service firms involved attracting new customers for a usually limited range of products -- passbook savings, simple checking, "plain-vanilla" commercial and industrial loans and so forth. In our study, we refer to this era as the period of *quantitative growth*.

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[1] Olivier Bertrand and Thierry Noyelle, *Human Resources and Corporate Strategy: Technological Change in Banks and Insurance Companies of Five OECD Countries*, Paris: OECD Press, 1988.

Carrying out this strategy involved, in part, the building of large distribution networks through which a growing clientele could be served: bank branches, brokerage offices, insurance agents' offices, and so forth.[2]

By the early 1980s, this phase of market expansion had peaked. In retail banking, for example, percentages of households with checking and savings account had shot up to near complete saturation--in the high 90 percentage range in countries such as France, Germany, and Japan; slightly lower in the United States and Sweden--from a 20 to 30 percent range in the early 1960s.

Saturation of traditional markets resulted in a sharp intensification of competition, as firms increasingly vied for the same customer. The response to market saturation in each of the five countries roughly followed the same general direction: product diversification and "cross-selling," that is, expansion through growth in the range of services sold by firms to their existing base of customers. In our study, we refer to this new era as the era of *qualitative growth*.

In retail markets in the United States for example, as one banker put it, retail banking went "from six basic consumer banking products to over 100 today." In Sweden, we found strong evidence of a shift by insurance carriers to strategies emphasizing cross-selling that began in the mid-1980s.

A second common factor that triggered an intensification of competition among financial service firms was disintermediation. Disintermediation began in the wholesale financial markets in the mid-1970s, but quickly spread over to the retail markets in the late 1970s and early 1980s. In its broadest definition, disintermediation is the process by which financial service users sought to satisfy their needs outside the traditional institutional networks: for example, corporate customers' shift from loan to capital markets; or, individual customers' shift from commercial banking deposits to mutual fund investments. To a very large extent, disintermediation was a by-product of the inflation of the 1970s and the growing imbalances between interest paid out by financial institutions to depositors, and interest charged, by those same institutions, to borrowers.

At first, commercial banks and insurance carriers were the most affected by disintermediation. By the mid 1980s, however, all financial players had been affected directly or indirectly. While an analysis of the impact of disintermediation is well beyond the scope of this paper, it is useful to note that the principal outcomes of disintermediation were extensive financial deregulation and considerable transformation in the products and services delivered by the financial industries.

**New Technology**

In a context of growing competition and changing markets, financial service firms turned to new computerized technologies to help them reorganize production processes, revamp old products, develop new ones and, in the end, compete better.

To conceptualize the introduction of new process technology in the financial sector, one banker that we interviewed offered a formulation including four major waves of applications, partly sequential and partly overlapping:

- Level one applications focused on the automation of transaction processing in back-offices. The beginning of this phase of automation dates back to the late 1950s and early 1960s;
- Level two applications focused on the development of financial flow reporting systems for the purpose of providing managers and corporate staff with both better data and better tools for more rigorous studies of costs, budgets, revenue projections, profits and losses. The

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[2] Bankers, in France, refer to that period as "La Guerre des Boulangeries" ("The War of the Bakery Shops") because commercial and savings banks expanded their retail network largely by taking over leases of many bakery storefronts that were being vacated as a result of strong concentration in that sector during those years.

introduction of these computerized management information systems began in earnest in the mid 1970s;

- Level three applications emphasized the automation of front office tasks carried out traditionally in bank branches, insurance agents' field offices or stock brokers' offices, as well as the wiring of customers' computers directly into the firm's own systems. To the lay observer, this is probably the most visible recent effort by financial service firms to reform the way they do business -- involving ATMs, bank teller terminals, bank platform terminals, home banking, and electronic cash management and other systems. This development is very much related to the introduction of distributed data processing and is primarily a phenomenon of the 1980s;

- Level four applications involved the development of so-called expert systems. In their simplest form, these made their entry some years ago in the various rating and scoring systems used, for example, by banks in consumer credit areas or insurers in policy rating. In their latest, and perhaps most advanced version, such applications include program-trading or program-hedging software allowing banks' computers to initiate trades automatically, based purely on fluctuations in key market data fed electronically to those same computers.

To repeat, however, the impact of new information technologies has not been limited to production processes, but has affected products as well. For instance, the role played by computerized technology in the development of the credit card represents at once process and product technologies.

More importantly perhaps, as improved process technology has freed firms from the limitations once imposed by semiautomated or manual systems, it has allowed firms to shift a growing share of their human resources away from the details of production and toward the tasks associated with developing products and enhancing market presence. The result is a profound transformation in the skills and skill mix demanded by financial firms, apparent in every one of the twelve firms that we studied in each of the five countries. In the next section, I explore some of the dimensions of this transformation.

## THE NEED FOR NEW HUMAN RESOURCES

### Organizational Change

A major objective of the introduction of mainframe computers in financial services, beginning in the late 1950s, was to put in place number-crunching capacity to perform high-volume calculations at great speed and low cost. In a world dominated by highly standardized banking and insurance products, mainframe computer technology was consistent with the need to generate economies of scale and control costs, a requirement for improving a firm's competitiveness.

In labor terms, mainframe technology generated a relatively well-defined demand for specialized personnel, primarily systems analysts and engineers, programmers, computer operators and key punchers. Typically, mainframe technology was introduced and developed through a centralized systems division whose mission was to develop applications and process data for user departments. This contributed to a centralization of decision-making responsibilities, consistent with the need to achieve scale economies. Geographically, this centralization of power was usually accompanied by a centralization of data-entry personnel in large back-office facilities, again to capitalize on the technology.

The introduction of distributed data processing in the 1970s gave banks and insurance companies a far more flexible tool, allowing for a reversal of earlier centralizing tendencies and a renewed emphasis on decentralization -- both organizational and geographical -- more consistent with the market transformations underway. Specifically, distributed data processing gave firms the opportunity to return some decision-making responsibilities to field-offices, thereby allowing for greater flexibility in market strategy and product design, without jeopardizing the need for some degree of centralized coordination and oversight. We found numerous variations of this development in our study, as with the case, for example, of large national insurance firms that were able to use distributed data processing to move away from universal pricing to zone pricing by allowing local managers to adjust prices for local risk ratios.

**Changing Division of Labor**

During the phase of *quantitative growth*, financial service firms focused primarily on improving the efficiency their production. To do so, they leaned heavily on Tayloristic work organizations, emphasizing an extensive division of labor and a corresponding de-skilling of a portion of their labor force. This was evident not only in the case of the reorganization of back-office work around the use of mainframe technology, but also in the way in which branch-office work was often organized.

In our study, we found considerable evidence that the new market environment of the 1980s was putting financial service firms under considerable pressure to reorganize work away from the extensive division of labor of the past.[3] The need for increasing customization of services at the branch or submarket level, the growing need for front-office employees to act in a customer support capacity, and the need for both more rapid and more focused development of new products were found to put increasing strains on existing divisions of labor, largely because of the growing disjunction between those in the position to know what the market demand and those, whom, in the past, had the authority to respond. Not surprisingly, we found the shift to a new division of labor being helped by the introduction of distributed data processing in at least two ways. First, this new phase of computerization helps redistribute market information throughout the organization so as to promote a basis for greater responsiveness at the field office level. Second, distributed data processing helps blur the earlier distinction between computer specialists and final users, since data processing work, and even systems development work, can increasingly be automated away or reintegrated as part of the work carried out by final users.[4]

**New Competencies**

It is against this background that the transformation in skill demand by firms must be evaluated. For the purpose of such discussion, it is useful to look at the process of skill transformation in terms of emerging new competencies--some specific to certain occupational echelons; others common to all--and, to the extent possible, to contrast these new competencies with old ones.

A first major trend among financial service firms is the drastic decrease in their need for lower-tier, clerical personnel in data-entry or simple paper-pushing positions. This is the result of both the dramatic productivity increases obtained through the increasing automation of simple clerical tasks and the widespread redistribution of remaining data-entry tasks to other workers throughout the organization or to customers themselves (e.g., ATMs, home banking, on-line cash management).

A second major trend is the shift affecting middle-tier employees, located in either branch offices or back-offices. More and more, these employees are called upon to work in either customer assistance or sales situations. Bank branch "platform" personnel, once employed mostly in "order-taking" positions (e.g., filling out forms to opening checking accounts) are increasingly needed to help customers make non-routine decisions or to help sell the bank's products. In an environment characterized by a great number of new banking products (e.g., CDs, money market funds, equity and bond funds, IRAs and KEOGHs, consumer loans and mortgages), and by the need to personalize the bank's service, branch employees are increasingly being thrust into situations where they must be able to both define the customer's needs and develop a

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[3] In this discussion, I overlook firm-to-firm differences intentionally in order to emphasize broad trends. As shown in the full study, some firms were clearly more progressive than others in the extent to which they were willing or able to reorganize the work process (Chapter 2). Also, for an excellent discussion of the case of the U.S. insurance industry, see Peter Albin and Eileen Appelbaum, "Computer Rationalization and the Transformation of Work: Lessons from the Insurance Industry," in Steve Wood, *The Transformation of Work*, U.K.: Hutchinson, 1989.

[4] See Thomas Bailey's excellent discussion of the shift to more "compact" production systems in "Changes in the Nature and Structure of Work: Implications for Employer-Sponsored Training," Conference on Employer-Sponsored Training, sponsored by the National Assessment of Vocational Education, U.S. Department of Education, and presented by the Institute on Education and the Economy, Teachers College, Columbia University, in Alexandria, VA, December 1 and 2, 1988.

solution which is somewhat unique. Back-office bank employees are also increasingly being brought into telephone customer assistance or sales positions not unlike those that are developing in the branch offices. Insurance carriers are undergoing the same transformation, with routine rating, claim processing, check processing and mailing tasks increasingly automated and back-office clerks more and more thrust into customer assistance positions (e.g., obtaining missing information, adjucating claims, advising customer on alternative coverage options).

Finally, among the upper echelons of the occupational hierarchy, the transformation process underway suggests a shift into two, only partially overlapping, directions: (1) a growing need for high-level specialists (traders, lawyers, marketers, product developers, systems analysts or engineers, etc.) who, to a large extent, must complement rather than replace operating managers; and (2) a growing need for new operating managers with a strong bent for strategic planning and entrepreneurship. These two emerging needs represent major shifts from an earlier time when managers were trained mostly as generalists and were asked to administer departments, manage personnel, and carry out business plans according to policies largely dictated by senior executives.

Topping these occupationally-specific skill transformations are transformations that, to a large extent, are felt throughout the firm:

1. Individuals who were once required to operate in well-defined and stable environments must now be able to perform in fast-changing, and often ill-defined, work situations;

2. Individuals who once worked in relatively highly supervised environments must now perform in work settings characterized by more diffused authority and decision-making capacity;

3. Individuals who once performed relatively highly structured work sequences, involving only limited necessary interaction with others, are now thrust into work situations necessitating extensive interaction with others--be they customers, suppliers, or other departments within the firm--to explain, negotiate, sell or otherwise communicate.

To some extent, this transformation in the matrix of competencies should be reflected in shifts in the firms' occupational structure--e.g., in the mix of clerical, technical, professional and managerial personnel employed by firms. We were unable to prove or disprove this hypothesis in our study, simply because of our inability to obtain reliable longitudinal data from the firms that we studied. Note, however, that data that I obtained from a large U.S. insurance carrier when I was working on my *Beyond Industrial Dualism* book, as well as published aggregate data for the U.S. financial sector, suggest that, over time, such skill transformation is contributing to extensive occupational shifts.[5]

More importantly perhaps, we must keep in mind that the skill transformation highlighted by this study is as much a transformation in the content of work--that is, in what people do, taking place within occupations themselves, as it is an occupational shift.[6]

## MOBILIZING HUMAN RESOURCES FOR THE NEW WORK ENVIRONMENT

Faced with a changing matrix of competencies, we found two principal ways in which firms were adjusting to meet the new labor force requirements: by renewing their pool of personnel through the external labor market; and by upgrading their human resources through increases in firm-based training.

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[5] Thierry Noyelle, *Beyond Industrial Dualism*, Boulder, CO: Westview Press, 1987, p.92. Also, *Human Resources and Corporate Strategy*, op. cit. p.45.

[6] This is a key point that tends to be lost in discussions about the Department of Labor long-term projections for employment growth in the United States. The point, insufficiently emphasized by the Bureau, is that the skill content of occupations can be vastly different today from what it was ten or fifteen years ago, even though occupational labels might remain unchanged.

**The Role of the External Labor Market**

Renewing the pool of personnel through the external labor market can be effected by using labor force turnover to the greatest extent possible. New hirings allow firms to bring in a new mix of people, with a different set of skills and different levels of educational attainment. In addition, turnover facilitates the introduction of new work arrangements--including increasing use of part-time work and changes in mobility structures--allowing firms to reach a better match between resources available and resources needed to meet the demands of the marketplace. For example, part-time work arrangements may allow firms to reach out to pools of labor otherwise unable to work full-time schedules, while allowing better control of labor costs by deploying resources in ways more in line with the demand load for their product (e.g., extra personnel during mid-day peak hours).

Adjusting through labor market turnover was found to be much more extensive in the United States and Japan than in Europe, as is shown in Table 1. The U.S. firms appeared to be characterized by the highest turnover rates of the entire group of firms examined. In Japan, turnover rates were usually quite low among men, but rather high among women who, for the most part, quit working during child-bearing and -rearing years. This peculiarity of the Japanese labor market, in no way unique to that country's financial service sector, gives firms in that sector considerable room for adjustment through labor turnover since women often represent a majority of those employed in financial firms. It is a feature that may change, however, with the rise of a new generation of Japanese women and the enforcement of a 1986 law to promote equal employment opportunity in Japan.

Turnover, of course, is correlated both to local or national traditions of employee attachment to the firm and to the age structure of the labor force, itself a reflection of earlier hiring practices by firms. Tight labor markets are often characterized by high degrees of job-hopping, as workers see diminished risks in changing jobs. Also, some countries are characterized by greater job-hopping than others--e.g., the United States vs. France--regardless of the business cycle, simply because of different traditions of workers' attachment to employers.

We found French firms to be the most constrained by low turnover rates, because of an unusually heavy concentration of employees in the 30- to 40-year-old bracket (the result of massive hirings in the early 1970s when French banks and insurance carriers expanded their distribution networks) in an industrial and labor relations environment characterized by strong job tenure.

Data made available to us by several of the firms confirmed the overarching desire by financial institutions in the five countries to use turnover to seek a labor force with higher levels of educational preparation than in the past. This trend can be explained in two ways. It is partly a response to the ever-growing availability of a better-educated labor force--the result of the enormous investment in education made by the five countries since the second World War; it is also a response by employers to the need for workers with stronger scholastic preparation.

The magnitude of the recent shift is shown in Table 2, which present the educational attainment of new hires in five of the twelve firms for both 1976 and 1985 as measured by years of education: less than twelve years, twelve years (*abitur, baccalaureat*, high school, etc) and more than twelve years. Two findings stand out. First, by 1985, none of the firms for which data were available were recruiting below the twelve-year educational level, except for a few employees in the German savings bank. Second, there remained major firm differences in the hiring of college-educated personnel. In percentage terms, such hiring was extensive in the Japanese, U.S., and French firms, but low in the German and Swedish firms. In the case of the French firm, however, the high proportion of new college-graduates represented only a few individuals because the firm's hiring rate was very low.

The impact of past and recent hiring policies on the educational attainment of the entire labor force of five of the companies visited is shown on Table 3. At one extreme, the Japanese insurance company stands out by the very high proportion of its employees with some college education by 1985; at the other, the two French firms stand out because of the extremely large proportion of their current employees with less than a complete secondary education.

Table 1

TURNOVER IN ELEVEN OF THE TWELVE FINANCIAL FIRMS

| | Hire Rates[1] |
|---|---|
| U.S. multinational bank | |
| North American consumer banking group | 23.0 |
| U.S. regional bank | 15.0 |
| Swedish bank | 4.7 |
| Swedish insurance company | |
| Excluding sales force | 5.7 |
| German savings bank | 5.5 |
| Large German bank | 4.1 |
| French regional bank | 2.8 |
| Large French bank regional district only | 1.3 |
| French insurance company | |
| Excluding sales force | 2.5 |
| Japanese insurance company | |
| Excluding sales force; full-time only | 7.3 |
| Men | 2.0 |
| Women | 10.5 |
| Japanese city bank | |
| Full-time only | 7.8 |
| Men | 2.6 |
| Women | 11.2 |

[1] New hires as percent of total employment.
Source: Company data.

Table 2

EDUCATIONAL ATTAINMENT OF NEW HIRES
(in percent)

| | 1985-1986 | | | 1976-1977[1] | | |
|---|---|---|---|---|---|---|
| | Less than 12 years | 12 years | More than 12 years | Less than 12 years | 12 years | More than 12 years |
| Japanese insurance company | | | | | | |
| Men | 0 | 0 | 100 | 0 | 28 | 72 |
| Women | 0 | 13 | 87 | 0 | 100 | 0 |
| German savings bank | 15 | 80 | 5 | 85 | 15 | 0 |
| Swedish bank | 0 | 80 | 5 | n.a. | n.a. | n.a. |
| U.S. multinational bank | | | | | | |
| North American consumer banking | -20- | | 80 | -large %- | | small % |
| French regional bank | 0 | 29 | 71 | 39 | 45 | 15 |

[1] 1982 for the French bank.
Source: Company data.

Table 3

EDUCATIONAL ATTAINMENT OF FIRMS' ENTIRE LABOR FORCE
(in percent)

| | 1985 | | | 1975 | | |
|---|---|---|---|---|---|---|
| | Less than 12 years | 12 years | More than 12 years | Less than 12 years | 12 years | More than 12 years |
| Swedish bank | 24 | 61 | 15 | 29 | 60 | 11 |
| Swedish insurance company[1] | 69 | 20 | 11 | n.a. | n.a. | n.a. |
| French insurance company | 66 | 22 | 9 | n.a. | n.a. | n.a. |
| French regional bank | 75 | -25- | | n.a. | n.a. | n.a. |
| Japanese insurance company | | | | | | |
| Men | 0 | 36 | 64[2] | 0 | 51 | 49 |
| Women | 0 | 70 | 30[3] | 0 | 100 | 0 |

[1] Headquarter employees only--see text for explanation.
[2] Mostly 4-year college education.
[3] Mostly 2-year college education.
Source: Company records.

The capacity to use the external labor market to adjust to a changing market environment could also be seen through the introduction of part-time work in the different countries. By the time we conducted our study, part-time employment was found to be already quite extensive everywhere but in France, as is shown on Table 4. In that country, management seemed to see part-time employment as disruptive of traditional work organization, while unions remained worried about its impact on certain classes of employees, including pay, job protection, and opportunities for skill training. (The issue of part-time employment and skill training opportunities is discussed below.)

In comparison, we found reliance on part-time employment going back to the 1970s, if not even earlier, in the German, Swedish, and U.S. financial service firms that we studied . In Japan, the use of part-time employment was a recent phenomenon, dating back to the early 1980s, but one that had grown extremely rapidly since then.

**Table 4**

**PART-TIME AS PERCENT OF TOTAL LABOR FORCE**
**1975 and 1985**
(in percent)

| | 1985 | 1975 |
|---|---|---|
| German savings bank | 18 | 24 (1977) |
| Swedish bank | 25 | 27 (1980) |
| Japanese city bank | 12 | 0 (1982) |
| Japanese insurance company (excluding sales force) | 6 | 0.5 |
| French regional bank | 8 | 6 (1982) |
| French insurance company (excluding sales force) | 5 | n.a. |
| U.S. regional bank (tellers only) | 25 | n.a. |
| U.S. multinational bank (tellers only) | 36 | n.a. |

Source: Company data

**Apprenticeship and Training**

Behind the upgrading in the educational attainment of the firms' labor force and the rise in new forms of employment, such as part-time, lies a much deeper transformation--one that is affecting the old employment system, under which upward mobility was achieved through the internal labor market. Under the old system, nearly every worker was hired at the entry-level. Firms filled supervisory, managerial and even executive positions through internal promotions and bore the brunt of providing the additional training required to move workers upward.

In this research, we found ample evidence that this earlier practice was coming under attack everywhere, with a broad-based tendency among firms to shift to multiple-entry point employment systems. Two reasons stood out. Despite country differences in the timing of this shift, the growing supply of college-educated youth everywhere was clearly forcing firms to reassess their hiring practices, if only to optimize their use of such supply. In addition, firms were often under great pressure to acquire, at rates faster than could be developed in-house, the new high-level, specialized expertise needed to compete.

We found the shift to multiple-entry point systems to be more advanced in the United States and France and somewhat less in Japan, Sweden, and Germany, in that order. Still, in Sweden, we found that while firms were under great pressure, particularly from the unions, to preserve the single-track system, in practice they too were changing. For example, the Swedish bank that we visited had already shifted to a three-entry point system, including a dead-end track for part-time tellers, a slow track for high-school graduates used to staff the bulk of the bank's clerical positions, and a fast track for college graduates. Likewise, in Japan we found growing hiring by large financial organizations directly from the experienced labor market to staff high-level professional positions.[7]

What the shift to multiple entry-point employment system implies, of course, is a fundamental redistribution of educational and work-training responsibilities between the formal educational system and employers. But such redistribution of responsibilities takes place against the background of old work entry systems that continue to differ substantially from country to country. So before focusing more narrowly on the implications of this redistribution for the content of firm-based work training, it is useful to take a look at some of those remaining country differences.

The twelve firms were found to offer a range of firm-based skill formation systems, ranging from systems in which the majority of workers were hired at relatively low levels of general education and then placed in firm-based apprenticeship programs to systems in which most workers were hired at relatively high levels of general education and placed almost immediately into regular positions. In all cases, of course, initial hiring and/or completion of apprenticeship were followed by on-the-job and off-the-job training during the employee's tenure with the firm.

The French and German firms were found to depend the most heavily on the apprenticeship model; the Japanese and U.S. firms, on the general education model; with the Swedish firms somewhere in between. With the general directions of change described earlier, it was clearly the old apprenticeship models that were under the greatest pressure to transform. And because European-style, not to say German-style, apprenticeship is often vaunted as the solution to poor quality high-school preparation in the United States, it maybe useful to examine how the French and German systems, in their financial service sectors, were responding under such pressure.[8]

In the French case, the broad tendency was to abandon the system by recruiting new clerical employees at the two-year college level (graduates of the Instituts Universitaires de Technologie). In the German case, the broad tendency was to keep but transform the system in two important ways. First, whereas in the 1970s most banking apprentices were recruited into apprenticeship programs before completing *Abitur* (end of high school), by the mid-1980s most apprentices were graduates of *Abitur*. Second, while in the past apprenticeship (lasting anywhere between one and a half to two and a half years) involved mostly on-the-job training, there was a marked shift to classroom training, not only in the number of hours of classroom training provided by the Landers (the states of FRG), but also by the firms themselves. In addition, the two German banks that we visited had by then begun accommodating the hiring of university-graduates by creating special entry tracks for them.

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[7] *Human Resources and Corporate Strategy*, op.cit., p.64; see also Masayoshi Kanabayashi, "In Japan, Employees Are Switching Firms for Better Work, Pay. The End to Lifetime Jobs?" *Wall Street Journal*, October 11, 1988, p.1.

[8] Gordon Berlin and Andrew Sum, "American Standards of Living, Family Welfare and the Basic Skill Crisis," Ford Foundation, December 1986.

## CURRENT TRAINING POLICIES AND IMPLICATIONS FOR THE UNITED STATES

### Formal Education and Firm-based Training

The growing emphasis on expanded formal educational preparation does not mean a decline in the role of firm-based training. On the contrary, we found clear indications that firm-based training was growing by leaps and bounds, at the same time that we found a shift in the nature of firm-based training.

To understand the shift underway, it is useful to look at firm-based training in terms of four areas of skill formation: general skills, product knowledge, new middle-level behaviors, and market knowledge and entrepreneurial behaviors. These four areas of skill formation can be seen as part of a continuum, with shifts occurring over time both in terms of the areas on which firms place emphasis and in terms of contents within each area.

**General skills.** Under this label, I bring together, as other labor market and education economists often do, those skill areas that are common to many work situations and can most easily be taught outside the world of work. They range from basic skills--literacy, writing, and numeracy--all the way to high-level expertise--such as computer science, accounting, engineering, or many like bodies of knowledge--that are usually taught at the college and graduate school level.

In employment systems in which firms used to hire workers at relatively low levels of formal education, firms often had to invest considerable additional resources in the formation of both "basic skills" and "expertise," be it on-the-job or off-the-job, in order to prepare individuals for promotions. Clearly, these are areas of skill formation that, more than ever before, most employers are trying to relinquish to the formal education system, even though those same employers may complain endlessly about the inability of the school system to do the job properly. Note in passing that bickering about the formal education system varies a great deal from country to country, reflecting each country's strengths and weaknesses: in Japan, it is mostly about the insufficiencies of the large scale, but weak, four-year college education program or the absence of a reasonably large graduate university education system; in Germany, about the weak business orientation of the traditional university system; in France and the United States, mostly about deficiencies in secondary and upper-secondary education.

The only area of general skill formation in which we found a continued, even growing, direct commitment by firms is in the area of communication skills--be they verbal or written, or based on other media (such as graphs). This seems to be the case not simply because of a perceived need by firms to remedy a major gap in current educational curricula, but also because communication skills are seen as intricately linked to the development of many of the new behaviors that they are trying to foster among their employees.

**Product knowledge.** In a market environment that was once characterized by great stability, long product cycles, and a very limited product range, training in the firm's product was something that was often done either informally on-the-job, or as part of "basic skill" training. For that matter, historically, training in an industry's basic products and methods formed one of the very foundations on which vocational education was based--be it firm-based or school-based.

With the destabilization of markets during the 1980s came both a shortening of the product cycle and a remarkable diversification in the product range of financial service firms. But not only does the number of products multiply as a result: their proprietary nature increases as that becomes a major way for firms to distinguish themselves from competitors in the market place. Thus, firm-based training in product knowledge becomes critical, especially in service industries such as banking or insurance where so much of the value-added remains embedded in production procedures carried out by labor, not machinery. In short, whatever tendencies might have once existed in the sector to externalize product training to the vocational education system--especially when products were few, the trend now is toward internalization.

**New middle-level behaviors.** Training for customer assistance skills and sales skills are two areas of skill formation that are also receiving growing attention from firms. This is in contrast to earlier times when they received only scant attention. Presumably, one was "born" with such skills, and this was the basis on

which individuals were put in positions involving sales responsibilities or customer contacts. In reality, such channeling was often a by-product of the sexual division of labor, with men in sales positions, women in customer assistance.

With the growing number of employees placed in positions necessitating contact with customers, firms are awakening to the strategic need to develop appropriate skills among a broad base of their employees, not only to help them deliver products, but also as a way for firms to project their identity into the marketplace. So, as noted here earlier, the growing need to develop these areas of skill formation is accompanied by a growing proprietary interest by firms.

**Market knowledge and entrepreneurial behaviors.** The firms surveyed in our study seemed quite aware of the need to better prepare managers and executives for a world of fast changing markets and consumer needs (to repeat, a radical change from the past in the case of banking and insurance). Their responses, typically, involved a mixture of reliance on executive training programs offered by local business schools and the firms' own seminars, conferences, and short training programs used both to familiarize managers with the changing business environment and to indoctrinate them in the specifics of the firm's own strategies. As in the past, job rotation for managerial personnel also played an important role in the training process.

More importantly perhaps, training for managers and executives was found to involve as much a transformation in the organizational processes through which strategic objectives are identified and reached within the organization as a transformation in traditional forms of training. In this respect, our study suggests that it is those firms that have gone the farthest in promoting decentralization seem to have been the most successful in fostering entrepreneurship.

Observations from our case studies go a long way in supporting one of Roger Vaughan's conclusions: that employer-provided training rarely compensates for poor education, or, that to the extent that it once did, does so less and less.[9]

**Distributional Issues of Skill Training**

One issue of growing concern to policy makers, but not addressed directly by our study, is the extent to which the emerging segmentation between core and periphery employees has implications for those likely to receive firm-based training and those likely not to. This new labor segmentation refers to the tendency by firms to distinguish increasingly between core groups of employees--including mostly full-time, long tenure workers--and peripheral groups--including mostly part-time and/or high turnover employee groups.

This is an issue that my colleague Bertrand and I are addressing directly in a new study for the OECD, focusing on retailing, health, and business services. We do think, however, that the findings from this new study are likely to have broad applicability to other sectors, including financial services.

Contrary to the commonly-held notion that segmentation between core and peripheral employees implies that the latter are likely to be left out of the firm's investment in skill formation, our findings, thus far, suggest that firms make little distinction among classes of employees, at least as far as product training and training for the new middle-level behaviors are concerned.[10] Rather, the relevant distinction seems to be between those firms that have articulated their need for such training and those that have not. Only in the case of training for market knowledge and entrepreneurial behavior--an area of skill formation targeted

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[9] Roger Vaughan, "Public Subsidies and Private Training," Conference on Employer-Sponsored Training, sponsored by the National Assessment of Vocational Education, U.S. Department of Education, and presented by the Institute on Education and the Economy, Teachers College, Columbia University, in Alexandria, VA, December 1 and 2, 1988.

[10] Based on preliminary case study interviews in France, Japan and the United States in supermarkets, department stores, hospitals, software firms and temporary work agencies.

primarily to managerial personnel--might there be a tendency to distinguish between core managers and high turnover specialists.

This finding seems consistent with the notion that, in a market environment characterized by growing diversity in product lines and by the need for more sophisticated interaction between customers and middle-level employees, to be competitive the firm must prepare its workers for the new work situations regardless of the long- or short-term nature of their employees' tenure. This, by the way, is wholly consistent with the notion that the very success of firms such as McDonald's or Burger King in the fast food industry rests on their ability to maintain high standards of quality and service despite very high turnover among employees (250 percent annual turnover in some local labor markets according to a former personnel executive at Burger King interviewed recently).

To the extent that firms do differentiate among core managers and the growing number of high-turnover specialists that they employ, one question to ask is how do firms reconcile this discrepancy with their need to develop a strong corporate culture. In a business world characterized by the growing need to differentiate oneself in the market, a strong corporate culture is often viewed as a key to success. According to banking executives met during follow up interviews to our study, however, these seemingly conflicting strategies need not be contradictory.

Many high turnover specialists (in financial firms, systems analysts and engineers, traders, marketers, lawyers, accountants, and so forth) often operate under not one, but two "cultures" or sets of loyalties: a loyalty to their profession and a loyalty to their current employer. Standards of work ethics and attention to quality of performance are usually upheld by the professional peer group. In a world of work characterized by high turnover, the standing of individual professionals within their peer group is often critical to their career path through job-hopping; their reputation precedes them.

In addition, many of the high turnover specialists tend to move in and out of the firm in conjunction with the phasing in or out of "products." For example, most of the banks that we surveyed had developed a similar practice of staffing software projects partly with permanent systems personnel and partly with a cadre of independent consultants or systems engineers employed on a project basis. Likewise, a bank might develop a particular trading desk as it moves into a new market niche, which will often be abandoned a few years down the line as the demand shifts to other niches. Within this context, traders and other specialists will come in as the desk develops to then move on to other jobs, inside or outside the bank. Under such a scenario, high levels of group cohesion and integration can be achieved by focusing the group on its short-term objective: e.g., complete the software project, develop the market niche.

The ability of some firms to uphold high standards of quality, generate high levels of innovation, and provide extensive training in support of objectives of competitiveness, despite high employee turnover, then begs the question to which, in my opinion, we still have far too few answers: what explains the success of such firms and how much does it have to do with training.

The answer to the second part of that question is likely to be both "a lot" and "very little." "Very little" in the sense that those firms' successful strategies find many of their roots in organizational changes and behaviors others than those directly associated with training; "a lot," in the sense that training is a *sine qua non* condition to the success of their strategies.

**Productivity and Competitiveness: A Score Card?**

Short of being able to develop a fully satisfying answer to the complex question raised above, we did ask ourselves what, if anything, our study might suggest regarding the competitiveness of a given firm or a given country relative to others. While apparently simpler to address, this question is one that we also found remarkably difficult to answer. This, for several reasons.

First, and to be true to our earlier analysis, the capacity of firms to derive benefits from technological change necessitates not simply adjustments in the firm's training mechanisms and contents, but also complex transformations in the firm's division of labor, organizational lines of responsibilities,

relationship to the external labor market, and relationship to the educational system.[11] An analysis of change variables decisively more rigorous than that which we conducted would have been necessary to develop any meaningful ranking of performance among the twelve firms surveyed. Anecdotally, however, we can report that:

- the U.S. multinational bank, the Swedish insurance company and the large German bank included in our sample appeared the most advanced in developing "qualitative" growth strategies;
- the Swedish bank, the Swedish insurance company, the two French banks, and the two Japanese banks appeared the most advanced in computerizing back-office transactions;
- the U.S. multinational bank, the French regional bank, and the Swedish bank appeared the most advanced in computerizing their front-offices;
- the U.S., Japanese, and German firms had moved the farthest to raise the educational attainment of their labor force; and so forth, suggesting a complex pattern of lags and leads from firm to firm.

Second, the one measure which presumably should synthesize the gains that firms achieve or fail to achieve through technological and other changes--productivity--does not permit comparisons of competitiveness for many service industries, including financial services. This is a problem that has long been overlooked by economists, but one that has begun receiving attention lately.[12]

In "Productivity in Services," Stanback and I show that the measure of deflated Gross Product Originating (GPO) that is used to measure the denominator in the productivity equation is deficient for 63 percent of the service GPO! In most cases, "deficient" means that output is deflated using a labor input based-deflator rather than a price series that has an implicit no-productivity growth assumption.[13] Not surprisingly then, most service sectors show up in the government series as having made no productivity gains in recent years.

When shifting to international comparisons, the data made available by the OECD are equally poor, if not worse, despite the Organisation's claims to the contrary: some countries decide arbitrarily on annual productivity increases that are then built into their published series, others simply "massage" the output data when they feel the gains are too small.[14]

The Bureau of Labor Statistics (BLS) at the U.S. Department of Labor, in charge of developing productivity series, is very much aware of the problems associated with using the GPO measures for many of the services. As a result, BLS is developing its own measures of output growth, based on physical indexes, to try to recompute productivity. In the case of financial services, the Bureau has developed a new series solely for commercial banking, based on a composite index of production volumes in check processing, commercial

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[11] This, by the way, is consistent with a thesis that Ginzberg, Stanback and I developed in *Technology and Employment*, Boulder, CO: Westview, 1985; and also used in a recent study by the National Academy of Science on *The National Challenge in Computer Science and Technology*, Washington, D.C.: National Academy Press, 1988.

[12] See John Kendrick, "Outputs, Inputs and Productivity in Service Industries" in *Statistics about Service Industries*, Washington: National Academy Press, 1986, p.69; Martin Baily and Richard Gordon, "Measurement Issues, the Productivity Slowdown, and the Explosion of Computer Power," in *Brookings Papers on Economic Activity*, No. 2, 1988; Thomas Stanback and Thierry Noyelle, "Productivity in Services: A Valid Measure of Economic Performance?", Conservation of Human Resources, Columbia University, 1988.

[13] "Productivity in the Services," op. cit, p.7.

[14] "Productivity in the Services," op.cit, pp.9-10.

and industrial loan processing, and trust account processing. Not surprisingly, the measure--limited to productivity gains in certain, mostly back-office areas of commercial banks--suggests productivity gains consistent with the massive introduction of new technology in banks during the 1980s. Those are consistent with Martin Baily's and Robert Gordon's own, independent observations for the sector.[15]

On a comparative basis, the problem, of course, is that there are no series from other countries to compare those alternative BLS series with.

During the 1970s, much was made of the U.S. productivity crisis. The argument, which I believe was correct at the time, was largely based on comparisons of the U.S. manufacturing sector with that of other countries. Some seem comfortable with staying with this broad, sweeping assumption for the 1980s.[16] My own sense is that some of the worst trends of the 1970s have been reversed in some areas of manufacturing, with some sectors rising to the challenge of foreign competition. More importantly, in the services, as far as I can tell from this and other analyses based on case studies, it is in no way clear that U.S. firms are lagging in their capacity to manage market shifts, to secure gains from new process technology, or to invest in the training of their workers. This does not mean, however, that there is no room for improvement.

Clearly, I have no hard evidence to prove the competitiveness of U.S. service firms, but nobody else has either. And, after all, public policy makers can rarely wait for all the evidence to be in to decide on the course to follow. One critical lesson from the study reported on here is that restoring this nation's competitiveness will necessitate complex processes of organizational transformations that are likely to be far more encompassing than the single-minded search for academic excellence in K-through-12 education--important in its own right--with which this nation has lately become obsessed.

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[15] "Measurement Issues," op.cit, pp.393-342.

[16] Lester Thurow, "A Weakness in Process Technology," *Science*, vol. 238, pp. 1959-1663.

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